



Review

Autopsy in Islam and current practice in Arab Muslim countries



Madadin Mohammed, MD Assistant Professor of Forensic Medicine^{a,*},
Magdy A. Kharoshah, MD, MFFLM Contributor,
Consultant Forensic Medical Examiner^{b,c}

^a Department of Pathology, University of Dammam, Saudi Arabia

^b Forensic Medicine Center in Dammam, Saudi Arabia

^c Egyptian Forensic Medicine Authority, Egypt

ARTICLE INFO

Article history:

Received 23 November 2013

Received in revised form

2 February 2014

Accepted 9 February 2014

Available online 20 February 2014

Keywords:

Islam

Autopsy

History of autopsy

Practice of autopsy

ABSTRACT

Autopsy, or post-mortem examination, is the dissection of a dead body. It is performed for many reasons. Attitudes toward dead bodies vary with religious beliefs and cultural and geographical backgrounds.

We have carried out an extensive literature review to determine the Islamic view and current practice of Autopsy, in at least four Arab countries which published their experiences. Several research articles have studied the history of Islamic Autopsy as well as the current situation and legal debates about it.

The overwhelming conclusion is that data is lacking. More must be published from Arabic Muslim countries and more research done to correct misconceptions. We also recommend more application of non-invasive Autopsy.

© 2014 Elsevier Ltd and Faculty of Forensic and Legal Medicine. All rights reserved.

1. Introduction

Autopsy, or post-mortem examination, is dissection of a dead body. It is done for many reasons, including education and for legal considerations. In the latter, it may determine cause, manner, or mechanism of death. Religious beliefs, cultures and nations have treated dead bodies in different ways, including mummification, burials, cremation, or even using dead bodies in arts.² Attitudes toward bodies have changed over time, and the role of autopsy has changed as well. Today, two types of autopsy are practiced: forensic and hospital.¹

The following literature review is aimed at determining the Islamic view and current practice of autopsy in four Arab countries who published their experience out of 22 Arabic countries. The search strategy for identifying peer-reviewed, published scientific literature relevant to the present review was done employing the electronic data, PubMed-MEDLINE. Further, a bibliographic search of the articles identified mainly using PubMed-MEDLINE and others such as Google scholars was performed to include additional relevant articles. Search different combined words including, Death, Autopsy, post-mortem, Arab, Forensic. Several research articles have studied the Islamic perspective on autopsy in the past as well as current legal (Shari'ah) issues and debates about it.

2. History of autopsy

The history of autopsy has several stages. In its *early history*, ancient Egyptians practiced mummification, and third-century Alexandrians and other Greeks dissected bodies openly. Information about autopsy during the *Middle Ages* is scarce, but some contemporary references show an interest in it. During autopsy's *modern or recent ages*, beginning in the 15th century, autopsies showed more consideration for pathology. Through the next three centuries, pathology continued to advance until the golden period of autopsy, the 19th and 20th centuries.^{3,4}

Throughout this evolution, reaction toward autopsy was changing due to many factors. Attitudes about both death and autopsy vary between societies, and within a society between demographics.⁵

When one considers an autopsy's benefits, it must be with respect to the current beliefs of society. Unfortunately, the procedure is burdened with a variety of misconceptions, myths and emotions.⁵

Even today, many people treat the body as the only symbol of the deceased, the icon of the dead person's life.⁵ Autopsy destroys this great symbol. Some family and religious situations may require specific time limits for autopsy, or limit it to external examination. It should be remembered that autopsy, unless legally required, is strictly forbidden within some major religions.⁶

In many cultures, not only Islam, autopsy is considered by many cultures to be disfiguring, invasive and disrespectful of the corpse.^{7,8}

* Corresponding author. Tel.: +966 504997673 (mobile).

E-mail address: mmadin@ud.edu.sa (M. Mohammed).

3. Brief description of Islam, sources and beliefs

Islam is the second largest religion, with more than one billion Muslims worldwide. It began in 610 A.D., at Mecca.⁹

Islamic law is called Shari'ah. Shari'ah comes from the Qur'an (the Islamic holy book), the Hadith (words of the prophet Mohammed), and fatwas (legal opinion by Islamic scholars).^{10,11} Some issues not mentioned by the Qur'an and Hadith have triggered debates may among Islamic scholars.

Many subdivisions in Islam have led to variance in some aspects, though not the fundamentals, this mean all Muslims sharing same concepts but may differ in certain issues specially those not fully cleared by Qur'an or Hadith. While Muslims live all over the world, Islamic law (Shari'ah) is applied only in Muslim-dominated nations, about 40 of them, some of which apply a mixture of laws.^{10,11}

4. Islam and medicine

Islam seeks to motivate, support, and improve humanity in all aspects. The major sources of Islamic law, the Qur'an and Hadith, stress human wellness, and Muslims brought about a revolution in medicine between the 13th and 18th centuries. They have discovered and explained many issues in different fields of medicine, with their books translated and taught in European universities for example Alzahrawi book which is called *Tasrif* was one of the major medical texts in European universities.^{12,13}

5. Islam and autopsy

Muslims believe in God and the afterlife. It is a religious requirement that the body be buried after death immediately. There is no cremation in Islam.¹⁴ Bereavement lasts for three days after the burial, another reason Muslims bury bodies after death as soon as possible.¹⁵

The Qur'an and the Hadith never address the issue of autopsy. So scholars have offered more than one opinion, which may cause misunderstanding but also lead to a positive synthesis.¹⁶

Dissection was not practiced in early Islam, but was in later periods. Some Muslim physicians dissected bodies for education and learning from the 10th to the 12th century, such as Rhazes and Avicenna.^{11,17} However, their contemporary, Ibn Alnafis, avoided dissection because he considered it religiously unacceptable.¹⁸

Most religions have an unfavorable view of autopsy, and Islam is among them.¹⁹ It has called for respect of the body after death and prohibited its disfigurement, based on the Hadith, "The breaking of the bone of a dead person is like breaking the bone of a live person." But in 1952, the head of the Islamic School of Jurisprudence in Egypt on 1952 stated that "Necessity permits the forbidden," thus allowing autopsies in cases of criminal death or suspected deaths. In 1982, another legal opinion committee (fatwa) found the advantages of autopsy greater than the disadvantages if it serves justice.^{16,20,21} So Islam now accepts autopsies when useful.

Autopsy has important value to crime-solving, and a crucial role in many areas of medicine, including quality control, medical education, and research.^{22–25}

Islam no longer conflicts with autopsy, but social aspects matter more to the public view than religious facts. We can confirm this by the unfavorable status of autopsy in many non-Muslim societies.^{5,26,27}

6. Current practice of autopsy in some Arabic Muslim countries

Nowadays autopsy is practiced all over the world. Some Arab Muslim countries perform it in accordance with international scientific standards²⁸ and because of little published work there is no

clear vision about practice standards in most of these countries. Autopsy is practiced by forensic medicine departments under either the Ministry of Health or Ministry of Justice's authority. Some countries have published papers about their services in the field; we reviewed these publications.

6.1. Saudi Arabia

The law in the Kingdom of Saudi Arabia (KSA) is entirely derived from Shari'ah law: this includes medical and legal death investigations. This makes the KSA unique: other Islamic countries combine Islamic and other judiciary systems.

Most victim families still do not desire autopsy, due to the religious belief that immediate burial is essential to comfort the deceased. So in many cases, an external examination is done first. Autopsies are not performed unless necessary, and examiners can even order a burial without further assessment if the evidence appears clear or if a medical report can obtain the cause of death. However, prosecutors in Saudi Arabia can order autopsies without the family's consent in suspicious cases.

Forensic medicine in the KSA answers to the Ministry of Health, whether pathology or clinical. Some universities also teach medical students forensic medicine and autopsy up to the postgraduate level. Recently, Saudi Arabians have published a few scientific papers in the field.^{28–31}

6.2. Egypt

In 1890, the first Forensic Medicine department was established in Cairo. The Forensic Medicine Authority was joined with the Ministry of Justice in 1932.³²

Forensic medicine in Egypt is practiced as forensic pathology and clinical forensic medicine. The latter is taking an important role in all medical malpractice cases. Forensic medicine is taught in all universities at undergraduate and postgraduate levels.³²

Few Data related to forensic practice are published specially at international journals, although different types of autopsy related data are published such as suicide deaths, child death, violence death, among others.^{33,34}

6.3. Tunisia

In Tunisia, forensic medicine has been practiced since the 1960s under the authority of the Ministry of Public Health as forensic pathology and clinical forensic medicine³⁵ although there is no information about number and types of autopsy.

6.4. Qatar

The law in Qatar is Islamic law. Forensic medicine is practiced in Qatar solely by Hamad General Hospital. All Qatari medico-legal cases are subject to forensic investigation.³⁶ No data about number and types of cases are published.

7. Conclusion

Autopsy is practiced in Islamic countries, but due to social issues based on some religious beliefs autopsy is unfavorable among public, only a few Arabic countries have published their experiences in the field. There is little scientific data from these countries either. There are many researches about autopsy misconception but not in Islamic countries. Common reasons make autopsy undesired include disfigurement of the body and delay funeral, previous study showed that 59% of the population surveyed believed that an autopsy causes disfigurement of the body, and 69% believe that an

autopsy will delay the funeral, in Islam early funeral is favorable as well as protection of dead body from disfigurement.⁸ We recommend more research and publication in the field to recognize and correct misconceptions about autopsy among the Muslims communities. And more participation in data publication in forensic practice as their contribution is little.

The universal objections to traditional autopsy, has led to the search for minimally invasive alternatives, imaging was found to be non-invasive substitute of autopsy. Many articles published on imaging as an alternative to autopsy, and many projects have been started.³⁷ Unfortunately no one of Islamic countries has reported using imaging autopsy applications.

The virtual autopsy or 'Virtopsy' is approach to forensic radiological imaging developed in Switzerland, that is already used in the UK and other countries, imaging autopsy can be used thorough different forensic circumstances such as post-mortem investigations.³⁸

Most obvious Advantage of this alternative is non-invasive nature of imaging autopsy, other advantages include less time per autopsy, 3D reconstruction, transferable digital images and sharing of imaging data in addition to ability of getting tissue specimens prior to destructive sectioning.^{39–41}

But still there are many disadvantages of imaging autopsy, it doesn't not detect all causes of death because limitation in CT and MRI in diagnosis of major cause of death. Post-mortem changes lead to some problems for imaging diagnosis such as differentiation between intra-abdominal gas due to putrefaction and ante-mortem gas may be difficult. Similarly, it has not been possible to distinguish between a post-mortem clot and an ante-mortem thrombus using cross-sectional imaging. Other limitations include availability of imaging facilities, transfer of the cadavers to these facilities, staffing, storing and transferring the data, financial issues, determining the cost of the service and how this will be funded, training radiologists and pathologists and assessing their competency.^{41–44}

At present, the evidence is insufficient to stop completely the traditional autopsy and to depend only on the imaging autopsy but if used as a screen before autopsy; imaging might avoid unnecessary invasive autopsies. Therefore, imaging will eventually reduce the number of invasive autopsies. So We recommend that more application of non-invasive autopsy must be carried on in Islamic countries.

Ethical approval

None.

Funding

None.

Conflict of interest

None declared.

References

- Saukko P, Knight B. *Knights forensic pathology*. 3rd ed. London: Hodder Arnold; 2004.
- Gulczyński J, Izycka-Swieszewska E, Grzybiak M. Short history of the autopsy. Part I. From prehistory to the middle of the 16th century. *Pol J Pathol* 2009;**60**(3):109–14.
- Dada MA, Ansari NA. The post mortem examination in diagnosis. *J Clin Pathol* 1996;**49**:965–6.
- King LS, Meehan MC. A history of the autopsy. *Am J Pathol* 1973;**73**:514–44.
- Vance RP. An unintentional irony: the autopsy in modern medicine and society. *Hum Pathol* 1990 Feb;**21**(2):136–44 [Internet; cited 2013 July 29] Available from: <http://www.ncbi.nlm.nih.gov/pubmed/2307440>.
- Boglioli LR, Taff ML. Religious objection to autopsy: an ethical dilemma for medical examiners. *Am J Forensic Med Pathol* 1990;**11**:1–8.
- Cox JA, Lukande RL, Katerregga A, Mayanja-Kizza H, Manabe YC, Colebunders R. Autopsy acceptance rate and reasons for decline in Mulago Hospital, Kampala, Uganda. *Trop Med Int Health* 2011 Aug;**16**(8):1015–8 [Internet; cited 2013 July 27] Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21564428>.
- Start RD, Saul CA, Cotton DWK, Mathers NJ, Underwood JCE. Public perceptions of necropsy. *J Clin Pathol* 1995;**48**:497–500.
- Rispler-Chaim V. The ethics of postmortem examinations in contemporary Islam. *J Med Ethics* 1993 Sep;**19**(3):164–8 [Internet; cited 2013 Mar 27] Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1376285&tool=pmcentrez&rendertype=abstract>.
- Islam. UK: London, [Internet; cited 2013 August 5]. Available from: <http://www.bbc.co.uk/religion/religions/islam/>; 2013.
- Shari'ah law and the judicial system. In: Payne-James J, Busuttill A, Smock W, editors. *Forensic medicine: clinical and pathological aspects*. London, UK: Greenwich Medical Media Ltd; 2003. 29Y37 [Chapter 3].
- Majeed A. How Islam changed medicine. *BMJ* 2005 December 24;**331**(7531):1486–7.
- Assad Salman, Niazi Asfandyar Khan, Assad Shuja. Health and Islam. *J Midlife Health* 2013 Jan–Mar;**4**(1):65.
- Gatrad R, Sheikh A. Professional issues. Palliative care for Muslims and issues after death. *Int J Palliat Nurs* 2002 Dec;**8**(12):594–7.
- Muslim customs surrounding death, bereavement, postmortem examinations, and organ transplants. *BMJ* 1994;**309**:521.
- Davis GJ, Peterson BR. Dilemmas and solutions for the pathologist and clinician encountering religious views of the autopsy. *South Med J* 1996 Nov;**89**(11):1041–4.
- Ghanem I. Permission for performing an autopsy: the pitfalls under Islamic Law. *Med Sci Law* 1988;**28**:241–2.
- Huff Toby. *Intellectual curiosity and the scientific revolution: a global perspective*. New York: Cambridge University Press; 2011. ISBN 978-1-107-00082-7; 2011.
- Seilhean D. Autopsy and religions. *Bull Acad Natl Med* 2001;**185**(5):877–87.
- Burton Elizabeth C. *Religions and autopsy* [Internet]. Medscape [updated 21 March 2012; cited 2013 July 2] Available from: <http://emedicine.medscape.com/article/1705993-overview>; 2012.
- Islam Today [Internet; cited 2013 June 10]. Available from: <http://en.islamtoday.net/node/775>; 2013.
- Smith CJ, Scott SM, Wagner BM. The necessary role of the autopsy in cardiovascular epidemiology. *Hum Pathol* 1998 Dec;**29**(12):1469–79 [Internet; cited 2013 August 27] Available from: <http://www.ncbi.nlm.nih.gov/pubmed/9865835>.
- Dudrick SJ, Gathe Joseph C. Autopsy as a performance measurement tool. *ARCB Path Lab Med* 1999;**56**(6):315–7.
- Fu C, Chute DJ, Farag ES, Garakian J, Cummings JL, Vinters HV. Comorbidity in dementia: an autopsy study. *Arch Pathol Lab Med* 2004;**128**:32–8.
- Burke MC, Aghababian RV, Blackburn B. Use of autopsy results in the emergency department quality assurance plan. *Ann Emerg Med* 1990 Apr;**19**(4):363–6 [Internet; cited 2013 August 28] Available from: <http://www.ncbi.nlm.nih.gov/pubmed/2321819>.
- Kosemehmetoglu K, Tumer Ali R, Usulutun A. Autopsy status and pathologists attitudes toward autopsy in Turkey. *Turk J Med Sci* 2007;**37**(6):351–8.
- Plattner T, Scheurer E, Zollinger U. The response of relatives to medico legal investigations and forensic autopsy. *Am J Forensic Med Pathol* 2002 Dec;**23**(4):345–8 [Internet; cited 2013 August 27] Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12464810>.
- Mohamed O, Madani A, Abdel M, Kharoshah A, Zaki MK, Galeb SS, et al. Origin and development of forensic medicine in the Kingdom of Saudi Arabia. *Am J Forensic Med Pathol* 2012;**33**(2):147–51.
- Madadin M, Mahmoud A, Alsowayigh K, Alfaraidd M. Suicide deaths in Dammam, Kingdom of Saudi Arabia: retrospective study. *Egypt J Forensic Sci* 2013 Apr;**3**:39–43.
- Madadin M, Eldosary M, Almoghaniem S, Hafez AY, Mourad M, Tubaigy S. Homicidal deaths in Dammam, Kingdom of Saudi Arabia. *Egypt J Forensic Sci* 2011;**1**(3–4):114–7.
- University of Dammam, Department of Pathology. 2013 [Internet; cited 5 August 2013] Available from: http://www.ud.edu.sa/DU/en/colleges/col_health/col_medicine/COL_MED_DEPT_PATHLOGY_EN.
- Kharoshah MA, Zaki MK, Galeb SS, Moulana AA, Elsebaay EA. Origin and development of forensic medicine in Egypt. *J Forensic Leg Med* 2011;**18**(1):10–3.
- Gad ElHak SA, El-Ghazali AM, Salama MM, Aboelyazeed AY. Fatal suicide cases in Port Said city, Egypt. *J Forensic Leg Med* 2009 Jul;**16**(5):266–8.
- Alsaif D, Alswayigh K, Alfaraidd M, Albayat M, Alshamsi G, Aldosary M, et al. Child homicide in Cairo from 2006 to 2010: trends and characteristics. *J Forensic Leg Med* 2013 Oct;**20**(7):929–32.
- Mghirbi T, Aissaoui A, Turki E, Chadly A. Forensic medicine in Tunisia. *Forensic Sci Int* 2004;**146**(Suppl.):s33–5.
- Forensic pathology services and autopsy law in state of Qatar. *J Clin Forensic Med* 2006;**13**(1):15–20.
- Stawicki SP, Aggrawal A, Dean AJ, Bahner DA, Steinberg SM, Stehly CD, et al. Postmortem use of advanced imaging techniques: is autopsy going digital? *OPUS 12 Sci* 2008;**2**(4):18–23.
- Thali MJ, Jackowski C, Oesterhelweg L, Ross SG, Dirnhofer R. VIRTopsy – the Swiss virtual autopsy approach. *Leg Med* 2007 Mar;**9**(2):100–4.
- Thali MJ, Dirnhofer R, Becker R, Oliver W, Potter K. Is "virtual histology" the next step after the "virtual autopsy"? Magnetic resonance microscopy in forensic medicine. *Magn Reson Imaging* 2004 Oct;**22**(8):1131–8.
- O'Donoghue K, O'Regan KN, Sheridan CP, O'Connor OJ, Benson J, McWilliams S, et al. Investigation of the role of computed tomography as an adjunct to autopsy in the evaluation of stillbirth. *Eur J Radiol* 2012 Jul;**81**(7):1667–75.

41. Underwood J. Post-mortem imaging and autopsy: rivals or allies? *Lancet* 2012 Jan 14;**379**(9811):100–2.
42. Roberts ISD, Benamore RE, Benbow EW, Lee SH, Harris JN, Jackson A, et al. Post-mortem imaging as an alternative to autopsy in the diagnosis of adult deaths: a validation study. *Lancet* 2012 Jan 14;**379**(9811):136–42.
43. Bisset RAL, Thomas NB, Turnbull IW, Lee S. Postmortem examinations using magnetic resonance imaging: four year review of a working service. *BMJ* 2002;**324**:1423–4.
44. *Can cross-sectional imaging as an adjunct and/or alternative to the invasive autopsy be implemented within the NHS?*; 2012 October. UK: NHS report.